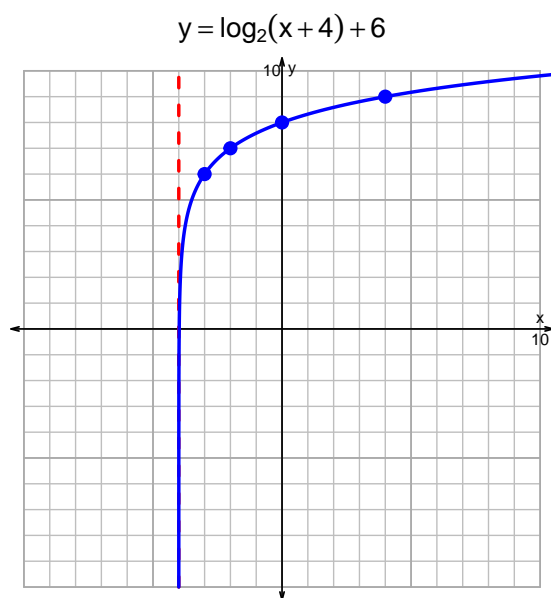
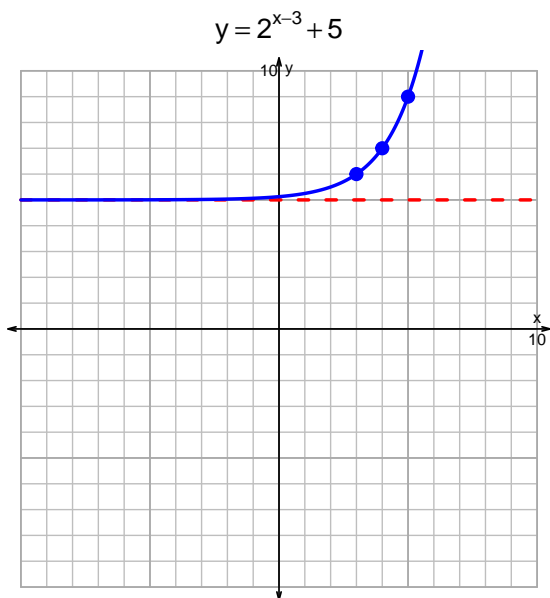


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v234)

1. Graph $y = 2^{x-3} + 5$ and $y = \log_2(x + 4) + 6$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$13 = \left(\frac{5}{4}\right) \cdot 10^{-3t/7}$$

Divide both sides by $\frac{5}{4}$.

$$\frac{13 \cdot 4}{5} = 10^{-3t/7}$$

Take log, base 10, of both sides.

$$\log_{10} \left(\frac{13 \cdot 4}{5} \right) = \frac{-3t}{7}$$

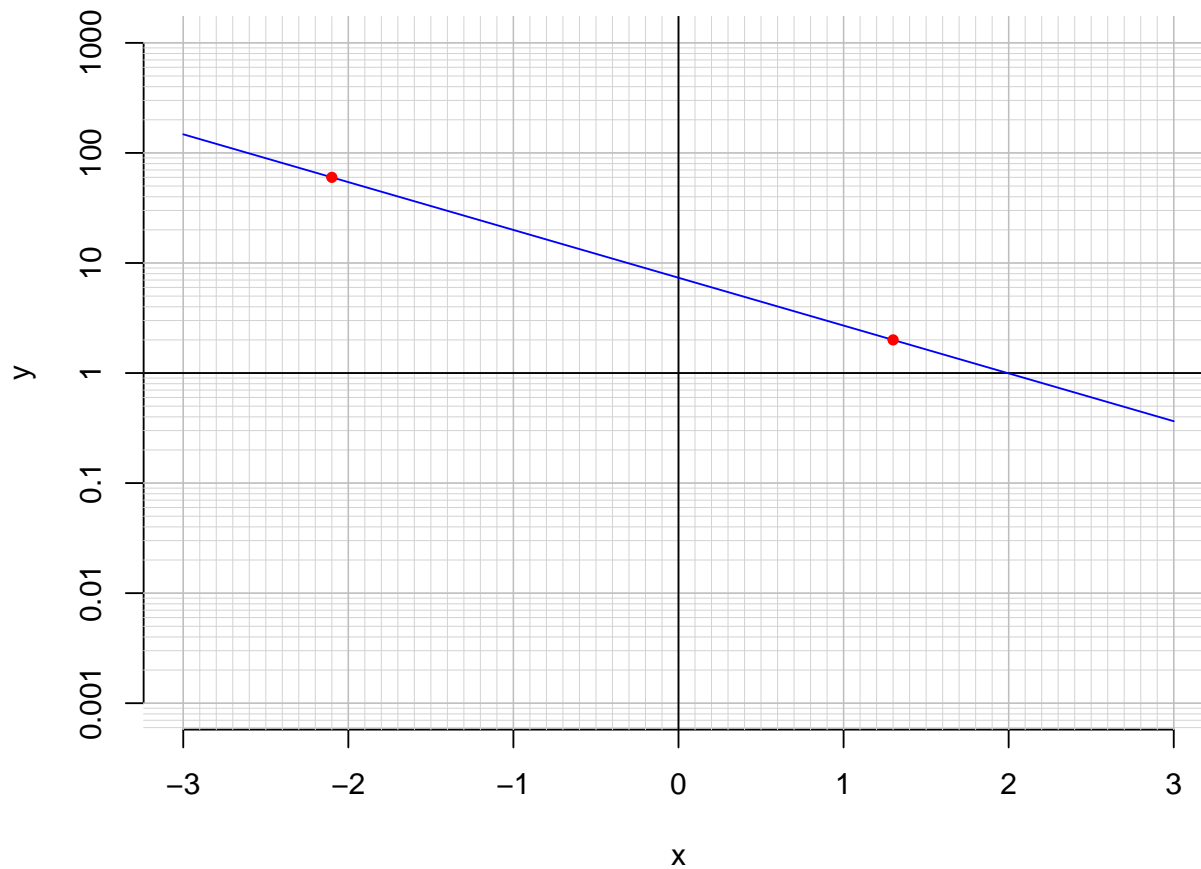
Divide both sides by $\frac{-3}{7}$.

$$\frac{-7}{3} \cdot \log_{10} \left(\frac{13 \cdot 4}{5} \right) = t$$

Switch sides.

$$t = \frac{-7}{3} \cdot \log_{10} \left(\frac{13 \cdot 4}{5} \right)$$

3. An exponential function $f(x) = 7.34 \cdot e^{-1x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(1.3)$.

$$f(1.3) = 2$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{-1}{1} \cdot \ln\left(\frac{x}{7.34}\right)$$

- c. Using the plot above, evaluate $f^{-1}(60)$.

$$f^{-1}(60) = -2.1$$